

INTERMOUNTAIN POWER SERVICE CORPORATION

April 23, 2009

Ms. Cheryl Heying, Director
Division of Air Quality
Department of Environmental Quality
P.O. Box 144820
Salt Lake City, UT 84114-4820

Dear Director Heying:

IPSC PSD Final Compliance Report

Intermountain Power Service Corporation (IPSC) is herein providing information to demonstrate compliance with federally enforceable limits set as conditions within our applicable Title V operating permit and approval order (AO). This report completes the five (5) year monitoring and reporting conditions that were effective during the reporting period:

- Title V Operating Permit #2700010003 (Issued 5/9/2008), Conditions II.B.2.f and II.B.2.g
- AO DAQE-AN0327015-05, Conditions 25 and 26

These conditions require IPSC to prove there were no significant emission increases of pollutants regulated under Prevention of Significant Deterioration (PSD) rules that were attributable to modifications performed by IPSC under AO DAQE-049-02 and the addition of overfire air. The specific PSD requirement implemented by these permits is promulgated as the "WEPCO" rule (see 40 CFR 52.21 and R307-101-2), which requires comparisons of emissions before and after source modifications.

Compliance Provisions

In order to avoid PSD major modification permitting, a modification cannot result in significant emission increases. Under the WEPCO rule, modifications can be permitted as minor if the permittee can represent projections that, all other things equal, post modification actual emissions are predicted to be less than significant increases from the actual emissions prior to the proposed change. IPSC followed this requirement when obtaining the approval to make the permitted modifications.

To show compliance with the WEPCO rule after the modifications have occurred, IPSC must compare two year actual emissions prior to the modification to actual emissions after the modification. If a significant increase in any PSD pollutant emission attributable to the modification is shown to have occurred, IPSC must then undergo a full PSD major modification process for that pollutant.

WEPCO allows the source to discount those emission increases not attributable to the modification. PSD provisions prevent using decreases when no netting is performed in permitting, as was the case in this particular permitting action. The permitted modifications affecting emissions at IGS are tied to increased heat input for higher generating capacity. Any emission increases not associated with the change can be excluded from the pre- and post-change emission comparison. These excluded emissions can be from non-modification related parameters such as demand growth, changes in fuel quality, operational variability in overall pollution control efficiency, operating hours, or those emissions that could have been otherwise accommodated during the baseline period. None of the modifications were non-routine replacements to accommodate forced outages. Accordingly, IPSC is not prevented to use changes in hours of operation to exclude emissions from either unit at IGS. (See the EPA policy determination letter to Henry V. Nickel on Detroit Edison, 5/23/00.)

WEPCO Compliance Analysis

Presented in Table 1 are the pollutant-by-pollutant compliance determinations as required by permit and the WEPCO rule. The calculations used take into consideration the ability to adjust and discount actual emissions by subtracting emission increases from operational differences not attributable to the modifications. These include adjustments for coal quality, control technology variability, hours of operation, or those emissions that could have been otherwise accommodated during the baseline period. For purposes of the permitting modifications tied to the IGS Dense Pack Project, the positive reducing effects from the use of overfire air must be added back onto the actual compliance period emissions. Since NO_x is the only pollutant beneficially affected by overfire air (OFA), the adjustments for OFA apply only to it. Table 1 clearly illustrates that the WEPCO test has been met for PSD pollutants applicable to IGS.

Fuel Quality and Control Variability

Variability in coal characteristics has an ultimate impact on emissions. Fuel parameters such as sulfur, nitrogen, volatiles, ash content, and trace metal concentrations influence the rate and form of the respective emitted counterparts. Pollutant loading also has an impact on the performance of applicable pollution control devices. For instance, higher loading of inlet sulfur compounds to the wet limestone scrubbers, cause a concomitant decrease in overall efficiency when operating at capacity. IPSC has developed from baseline data, the relationship of how changes in fuel quality will affect emissions, particularly for NO_x and SO₂.

IPSC is calculating excluded emissions based upon the actual operating data from the baseline period. IPSC has developed curve relationships between coal quality and control device response and changes in actual emissions. In practice, IPSC back calculates, based on this relationship, what the emissions for a given pollutant would have been had that particular fuel been used during the baseline period. Operating parameters from the baseline period, such as heat input, are used to make this calculation to ensure it is distinct from emissions that could be attributable to the modification. The difference from what could have been accommodated during the baseline period if this fuel was used and the actual baseline emission rates are those emissions not related to the change, and are therefore excluded, and thus deductible from any emission increase.

Hours of Operation

Nothing in either the Dense Pack Project or the OFA addition affected the forced outage rate for either IGS Units 1 or 2. IPSC has no history of forced outages due to any equipment

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modified under either permitted action. Thus, variability in year-to-year operating hours is utilized to compare directly that no significant emissions increase from the modifications occurred. As WEPCO dictates, even though the ultimate test is in tons per year comparisons, emissions are reduced to pounds per hour rates, and then calculated back to tons per year using equal hours of operation. This provides a direct measurement indicating any attributable emission increases.

Discounted OFA Control

For purposes of proving WEPCO compliance solely for the Dense Pack Project, IPSC must discount the beneficial NO_x control aspects of the overfire air system. That is, emission decreases provided by OFA must be added back to the actual emissions to demonstrate that the Dense Pack Project itself did not cause a significant emissions increase of any pollutant. IPSC has substantial operational data to predict the effect of OFA at modified capacities.

WEPCO Methodology

To present consistency in year to year reporting, IPSC is providing an overview of formulae, bases for calculations, and sources of data in the attached spreadsheets. Outlined in them are descriptions of those components used for calculating WEPCO compliance on a plant wide basis as well as unit by unit.

Conclusion

IPSC has demonstrated that no significant increase has occurred in the required five (5) year monitoring period, for any pollutant as a result of modifications at IGS. This completes the monitoring and reporting to show compliance with PSD determinations for the IGS Dense Pack modifications. All supporting documentation upon which this compliance report is based is available for review at the IGS site as required by rule and permit.

If you have any questions or need clarifications, please contact Mr. Jon P. Christensen, Superintendent of Technical Services at (435) 864-4414, or jon-c@ipsc.com.

In as much as this notice of intent may affect our Title V Operating Permit, I hereby certify that, based on information and belief formed after reasonable inquiry, the statements and information in this document are true, accurate, and complete.

Cordially,



George W. Cross

President and Chief Operations Officer & Title V Responsible Official

APC
LPB/BP:jmj

Enclosure: Computational Spreadsheets

cc: Blaine Ipson, IPSC
James Holtkamp, Holland & Hart
Nick C. Kezman, LADWP

2IP13-000003

TABLE 1 - WEPCO Emission Test - IGS

<u>Pollutant</u>	<u>Baseline Emissions (3/1/2000-2/28/2002)</u>	<u>Post change Emissions (4/2008-3/2009)</u>	<u>Difference increase / (decrease)</u>	<u>PSD Significance</u>
Nitrogen Oxides (w/OFA)	26,120	23,267	(2,853)	40
Nitrogen Oxides (w/o OFA)	26,120	24,327	(1,793)	40
Sulfur Dioxide	3,784	2,976	(808)	40
PM (Stack)	283	268	(15)	25
PM10 (Stack)	260	246	(14)	15
Ozone (VOCs)	11.8	13.7	1.9	40
Lead	.08	0.07	(0.02)	0.6
Beryllium	0.00087	0.00077	(0.00010)	0.0004
Mercury	0.079	0.084	0.005	0.1
Fluorides	10.4	12.5	2.1	3
Sulfuric Acid	8.0	10.7	2.7	7
Other sulfur compounds	62.4	67.8	5.4	10

NOTE: Values are in tons, and have been adjusted to disallow OFA benefits and to exclude emissions not attributable to the modifications. Baselines are shown on a hour equivalent basis. The table presents only those PSD pollutants reasonably expected to be emitted by IGS. Other sulfur compounds include total reduced sulfur and reduced sulfur compounds (TRS/RSC).

IPSC Reporting Year Summary Data

NOx rolling 12 month totals

UNIT ONE													
12 month ending	Actual NOx Emissions	Heat Input	Operating Hours	Inlet SO2 tons	Effective 12m Inlet SO2 rate	Representative NOx rate	Restructured NOx Baseline	Excluded Emissions	Non-OFA Predicted NOx Rate	Non-OFA Predicted NOx tons	Difference from Actuals (Disallowed Add-back)	Discounted Actual Emissions	Actual OFA Emissions difference from baseline
Jun-08	13640	6,99E+13	8,416	37311	1,068	0.451	14586	749	0.38976688	13617	0	12892	-945
Sep-08	13774	6,99E+13	8,372	38983	1,122	0.457	14700	925	0.38435265	13700	-927	12839	-927
Dec-08	14243	7,20E+13	8,647	40003	1,112	0.455	15145	927	0.39346076	14160	0	13316	-902
Mar-09	13979	7,16E+13	8,604	40845	1,140	0.459	15179	1027	0.38590926	14180	200	13153	-944

UNIT TWO													
12 month ending	Actual NOx Emissions	Heat Input	Operating Hours	Inlet SO2 tons	Effective 12m Inlet SO2 rate	Representative NOx rate	Restructured NOx Baseline	Excluded Emissions	Non-OFA Predicted NOx Rate	Non-OFA Predicted NOx tons	Difference from Actuals (Disallowed Add-back)	Discounted Actual Emissions	Actual OFA Emissions difference from baseline
Jun-08	12042	6,69E+13	7,968	35640	1,071	0.451	13755	1290	0.38003845	12977	935	11867	-1713
Sep-08	12386	6,69E+13	7,908	37547	1,137	0.458	13869	1497	0.39561268	13065	679	11567	-1483
Dec-08	12085	6,61E+13	7,908	37491	1,134	0.458	13860	1488	0.39537402	13070	985	11582	-1775
Mar-09	11894	6,38E+13	7,654	37641	1,178	0.463	13553	1580	0.38907984	12754	860	11174	-1659

SO2 rolling 12 month totals

UNIT ONE													
12 month ending	Actual SO2 Emissions	Heat Input	Operating Hours	Inlet SO2 tons	Effective 12m Inlet SO2 rate	Representative BaselineSO2 rate	Restructured SO2 Baseline	Excluded Emissions	Discounted Actual Emissions	Discounted Baseline (adjusted)	Discounted Actuals Difference from Baseline	PSD7 (>40ton)	
Jun-08	2707	6,99E+13	8,416	37311	1,068	0.093	3016	1067	1620	1929	-309	N	
Sep-08	2952	6,95E+13	8,372	38983	1,122	0.103	3312	1393	1558	1919	-361	N	
Dec-08	3017	7,20E+13	8,647	40003	1,112	0.103	3357	1375	1642	1982	-340	N	
Mar-09	3104	7,16E+13	8,604	40845	1,140	0.106	3516	1544	1560	1972	-412	N	

UNIT TWO													
12 month ending	Actual SO2 Emissions	Heat Input	Operating Hours	Inlet SO2 tons	Effective 12m Inlet SO2 rate	Representative BaselineSO2 rate	Restructured SO2 Baseline	Excluded Emissions	Discounted Actual Emissions	Discounted Baseline (adjusted)	Discounted Actuals Difference from Baseline	PSD7 (>40ton)	
Jun-08	2418	6,69E+13	7,968	35640	1,071	0.089	2702	816	1662	1886	-284	N	
Sep-08	2710	6,60E+13	7,908	37547	1,137	0.100	3021	1149	1560	1872	-311	N	
Dec-08	2675	6,61E+13	7,908	37491	1,134	0.099	3006	1134	1540	1872	-331	N	
Mar-09	2742	6,38E+13	7,654	37641	1,178	0.107	3138	1326	1416	1811	-396	N	

IPSC Reporting Year Summary Data

Stack PM rolling 12 month totals

UNIT ONE										
12 month ending	Actual PM Emissions	Heat Input	Effective Emission Rate	Operating Hours	Restructured Baseline	Discounted Emissions	Adjusted Actual Emissions	Baseline (adjusted)	Actuals Difference from Baseline	PSD? (>25ton)
Jun-08	124	6,98E+13	0.00354	8,416	115	0	124	183	-59	N
Sep-08	128	6,95E+13	0.00370	8,372	119	0	128	182	-53	N
Dec-08	147	7,20E+13	0.00410	8,647	136	0	147	188	-40	N
Mar-09	161	7,16E+13	0.00449	8,604	149	0	161	187	-26	N

UNIT TWO										
12 month ending	Actual PM Emissions	Heat Input	Effective Emission Rate	Operating Hours	Restructured Baseline	Discounted Emissions	Adjusted Actual Emissions	Baseline (adjusted)	Actuals Difference from Baseline	PSD? (>25ton)
Jun-08	116	6,65E+13	0.00348	7,968	106	6	110	100	10	N
Sep-08	129	6,60E+13	0.00390	7,908	118	18	110	100	11	N
Dec-08	129	6,61E+13	0.00390	7,908	118	18	110	100	11	N
Mar-09	125	6,39E+13	0.00390	7,654	114	18	107	96	10	N

Stack PM10 rolling 12 month totals

UNIT ONE										
12 month ending	Actual PM10 Emissions	Heat Input	Effective Emission Rate	Operating Hours	Restructured Baseline	Discounted Emissions	Adjusted Actual Emissions	Baseline (adjusted)	Actuals Difference from Baseline	PSD? (>15ton)
Jun-08	114	6,98E+13	0.00326	8,416	105	0	114	168	-54.3	N
Sep-08	118	6,95E+13	0.00340	8,372	110	0	118	167	-48.9	N
Dec-08	136	7,20E+13	0.00377	8,647	125	0	136	173	-37.0	N
Mar-09	148	7,16E+13	0.00413	8,604	137	0	148	172	-23.8	N

UNIT TWO										
12 month ending	Actual PM10 Emissions	Heat Input	Effective Emission Rate	Operating Hours	Restructured Baseline	Discounted Emissions	Adjusted Actual Emissions	Baseline (adjusted)	Actuals Difference from Baseline	PSD? (>15ton)
Jun-08	106	6,65E+13	0.00320	7,968	96	5	101	92	8.8	N
Sep-08	118	6,60E+13	0.00359	7,908	109	17	101	92	9.8	N
Dec-08	119	6,61E+13	0.00359	7,908	109	17	102	92	9.9	N
Mar-09	115	6,39E+13	0.00359	7,654	105	16	98	89	9.5	N

IPSC Reporting Year Summary Data

Beryllium rolling 12 month totals

UNIT ONE						UNIT TWO				
12 month ending	Actual Be Emissions	Operating Hours	Baseline (adjusted)	Actuals Difference from Baseline	PSD? (>0.0004ton)	Actual Be Emissions	Operating Hours	Baseline (adjusted)	Actuals Difference from Baseline	PSD? (>0.0004 ton)
	0.0003	8,416	0.0006	-0.0002	N	0.0003	7,968	0.0003	0.0000	N
	0.0003	8,372	0.0006	-0.0002	N	0.0003	7,908	0.0003	0.0001	N
	0.0004	8,647	0.0006	-0.0002	N	0.0004	7,908	0.0003	0.0001	N
	0.0004	8,604	0.0006	-0.0002	N	0.0003	7,654	0.0003	0.0001	N

Lead rolling 12 month totals

UNIT ONE										UNIT TWO				
12 month ending	Actual Pb Emissions	Operating Hours	Baseline (adjusted)	Actuals Difference from Baseline	PSD? (>0.6ton)	Actual Pb Emissions	Operating Hours	Baseline (adjusted)	Actuals Difference from		PSD? (>0.6ton)			
Jun-08	0.0310	8,416	0.0504	-0.0194	N	0.0289	7,968	0.0321	-0.0032		N			
Sep-08	0.0310	8,372	0.0501	-0.0191	N	0.0307	7,908	0.0318	-0.0011		N			
Dec-08	0.0352	8,647	0.0517	-0.0165	N	0.0311	7,908	0.0318	-0.0008		N			
Mar-09	0.0371	8,604	0.0515	-0.0144	N	0.0296	7,654	0.0308	-0.0012		N			

Mercury rolling 12 month totals

UNIT ONE						UNIT TWO				
12 month ending	Actual Hg Emissions	Operating Hours	Baseline (adjusted)	Actuals Difference from Baseline	PSD? (>0.1ton)	Actual Hg Emissions	Operating Hours	Actuals		
								Baseline (adjusted)	Difference from Baseline	PSD? (>0.1ton)
Jun-08	0.0413	8,416	0.0406	0.0006	N	0.0393	7,968	0.0386	0.0007	N
Sep-08	0.0412	8,372	0.0404	0.0008	N	0.0392	7,908	0.0383	0.0009	N
Dec-08	0.0434	8,647	0.0418	0.0016	N	0.0399	7,908	0.0383	0.0016	N
Mar-09	0.0442	8,604	0.0416	0.0026	N	0.0395	7,654	0.0371	0.0024	N

Flouride rolling 12 month totals

UNIT ONE						UNIT TWO				
12 month ending	Actual HF Emissions	Operating Hours	Baseline (adjusted)	Actuals Difference from Baseline	PSD? (>3ton)	Actual HF Emissions	Operating Hours	Baseline (adjusted)	Actuals	PSD? (>3ton)
									Difference from Baseline	
Jun-08	6,1619	8,416	5,3695	0,7924	N	5,8667	7,968	5,0970	0,7696	N
Sep-08	6,1530	8,372	5,3417	0,8113	N	5,8486	7,908	5,0590	0,7896	N
Dec-08	6,4773	8,647	5,5170	0,9603	N	5,9612	7,908	5,0590	0,3022	N
Mar-09	6,5961	8,604	5,4894	1,1067	N	5,3012	7,654	4,8962	1,0050	N

IPSC Reporting Year Summary Data

Sulfuric Acid rolling 12 month totals

	UNIT ONE					UNIT TWO			
	Actual H2SO4 Emissions	Operating Hours	Baseline (adjusted)	Actuals Difference from Baseline	PSD? (>7ton)	Actual H2SO4 Emissions	Operating Hours	Baseline (adjusted)	Actuals Difference from Baseline
12 month ending									
Jun-08	5,151.4	8,416	4,157.6	0.9938	N	4,899.5	7,968	3,906.8	0.9928
Sep-08	5,334.7	8,372	4,136.1	1,198.7	N	5,070.7	7,908	3,877.6	1,193.1
Dec-08	5,533.5	8,647	4,271.8	1,265.7	N	5,093.7	7,908	3,877.6	1,216.1
Mar-09	5,657.7	8,604	4,250.4	1,407.3	N	5,075.1	7,654	3,752.8	1,322.3

Total Reduced Sulfur / Reduced Sulfur Compounds (TRS/RSC) rolling 12 month totals

	UNIT ONE					UNIT TWO			
	Actual TRS/RSC Emissions	Operating Hours	Baseline (adjusted)	Actuals Difference from Baseline	PSD? (>10ton)	Actual TRS/RSC Emissions	Operating Hours	Baseline (adjusted)	Actuals Difference from Baseline
12 month ending									
Jun-08	34,935.4	8,416	32,368.3	2,567.0	N	33,270.5	7,968	30,500.0	2,770.5
Sep-08	34,741.7	8,372	32,201.0	2,540.7	N	33,024.6	7,908	30,272.2	2,752.4
Dec-08	35,988.4	8,647	33,257.8	2,730.7	N	33,057.5	7,908	30,272.2	2,785.3
Mar-09	35,815.1	8,604	33,091.4	2,723.7	N	31,958.3	7,654	29,297.9	2,660.3

Ozone (Volatile Organic Compounds) rolling 12 month totals

	UNIT ONE					UNIT TWO			
	Actual VOC Emissions	Operating Hours	Baseline (adjusted)	Actuals Difference from Baseline	PSD? (>40ton)	Actual VOC Emissions	Operating Hours	Baseline (adjusted)	Actuals Difference from Baseline
12 month ending									
Jun-08	6,788.2	8,416	6,133.0	0.6552	N	6,463.1	7,968	5,774.3	0.6887
Sep-08	6,778.5	8,372	6,101.3	0.6772	N	6,442.7	7,908	5,731.2	0.7115
Dec-08	7,127.8	8,647	6,301.5	0.8263	N	6,561.7	7,908	5,731.2	0.8304
Mar-09	7,249.3	8,604	6,270.0	0.9793	N	6,497.7	7,654	5,546.8	0.9509

IPSC Reporting Year Summary Data

WEPCO COMPLIANCE SUMMARY

(12 month rolling total emission)

For the Period ending:

March-2009

Pollutant (PSD)	WEPCO Trigger (tons)	UNIT ONE		
		Adj. Baseline	Adj. Emissions	WEPCO Met? (Y/N)
NOx (w/OFA)	40	14146	12953	Y
NOx (w/o OFA -projected)	40	14146	13153	Y
SOx	40	1972	1560	Y
PM (stack)	25	187	161	Y
PM ₁₀ (Stack)	15	172	148	Y
VOC (ozone)	40	6.3	7.2	Y
Lead	0.6	0.06	0.04	Y
Beryllium	0.0004	0.00059	0.00044	Y
Mercury	0.1	0.042	0.044	Y
Flourides	3	5.5	6.6	Y
Sulfuric Acid	7	4.3	5.7	Y
TRS/RSC	10	33.1	35.8	Y

UNIT TWO			
Adj. Baseline	Adj. Emissions	WEPCO Met? (Y/N)	
11973	10314	Y	
11973	11174	Y	
1811	1416	Y	
96	107	Y	
89	98	Y	
5.5	6.5	Y	
0.03	0.03	Y	
0.00028	0.00034	Y	
0.037	0.040	Y	
4.9	5.9	Y	
3.8	5.1	Y	
29.3	32.0	Y	

2006 Recruits in the Summer Data

2IP13-000010

WEPCO Compliance Baseline Period: March 1, 2000 to February 28, 2002

2IP13-000011

**INTERMOUNTAIN GENERATING STATION
EMISSION FACTOR FACT SHEET**

SOURCE	EMISSION FACTOR	UNITS / Formulae	Source / Table	PM Emission Rate (lb/mmmbtu) and Coal Trace Concentrations (ppm)									
				2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Stack, PM EF, Unit 1		lb/mmmbtu	Stack Test	0.0049	0.0073	0.0030	0.0033	0.0040	0.0030	0.0031	0.0031	0.0037	0.0053
Stack, PM EF, Unit 2		lb/mmmbtu	Stack Test	0.0034	0.0037	0.0024	0.0032	0.0052	0.0033	0.0030	0.0024	0.0039	0.0039
Stack, VOC (coal) Cumulative AP42	0.004292	lbs/ton	AP-42 1.1-13										
Stack, VOC (coal) Cumulative EPRI	8.2	lb/10 ¹² btu	EPRI Trace Substances Report										
Stack, VOC (oil) Cumulative AP42	0.2	lb/1000gal	AP-42 1.1-13										
Stack, VOC (oil) Cumulative EPRI	31	lb/10 ¹² btu	EPRI Trace Substances Report										
Stack, Be (coal)	1.2(C/A-PM)/1.1	lb/10 ¹² btu	AP-42 1.1-15	0.38	0.39	0.41	0.41	0.40	0.41	0.41	0.43	0.43	0.45
Stack, Be (coal)	3.4(C/A-PM)/0.80	lb/10 ¹² btu	AP-42 1.1-15	7.1	6.6	6.2	6	6	6	6	6	6	7
Stack, Hg (coal) Control Efficiency	76.9	%	Source Testing	0.061	0.068	0.065	0.06	0.06	0.06	0.06	0.06	0.06	0.06
Stack, F (coal) Control Efficiency	97	%	EPRI Trace Substances Report	63	68	68	65	66	66	67	68	68	72
Stack, Be (oil) Control Efficiency	0.2	lb/10 ¹² btu	EPRI Trace Substances Report										
Stack, Be (oil) Control Efficiency	30	%	EPRI Trace Substances Report										
Stack, Pb (oil) Control Efficiency	7	lb/10 ¹² btu	EPRI Trace Substances Report										
Stack, Pb (oil) Control Efficiency	30	%	EPRI Trace Substances Report										
Stack, Hg (oil) Control Efficiency	0.46	lb/10 ¹² btu	Source Testing										
Stack, Hg (oil) Control Efficiency	76.9	%	Source Testing										
Stack, H2SO4 (coal) Control Efficiency	6.45986	lb/ton	Source Testing										
Stack, H2SO4 (oil) Control Efficiency	92.02	%	Source Testing										
Stack, H2SO4 (oil)	0.00245	lb/gal	So Co Paper										
Stack, TRS/RSC	0.001	lb/mmmbtu	Eng Calc										
Stack SS&M (PM10)	0.42	lbs/ton	AP42 T1.1-6										
Stack SS&M (PM)	0.6	lbs/ton	AP42 T1.1-6										
Stack SS&M (PM10)	71	%	AP42 T1.1-6										
NOx relationship to Fuel Quality (Baseline)	0.1091x + 0.3341	lb/mmmbtu	Plant NOx Basis Worksheet										
NOx relationship to Fuel Quality (No OFA)	0.0848x - 0.2992	lb/mmmbtu	Plant NOx Basis Worksheet										
U1 SO2 relationship to Fuel Quality	0.0817x ²	lb/mmmbtu	U1 SO2 Basis Worksheet										
U2 SO2 relationship to Fuel Quality	0.0728x ²	lb/mmmbtu	U2 SO2 Basis Worksheet										

INTERMOUNTAIN GENERATING STATION Analysis Protocol

Refer to the following groups for description of general column headings in each WEPCO worksheet.
This protocol overview is provided to ensure consistency and validation in the following areas:

- 1 - Input Data
- 2 - Production & Emission Calculations
- 3 - WEPCO Analysis: Actuals to Actuals comparison, and adjusting for increases not attributable to the modifications.

Data Used	Data Sources
Fuel Throughput - Coal	Calibrated feeders located at each mill. Adjusted annually based upon coal stockpile inventory analysis.
Fuel Throughput - Fuel Oil	Flowmeters for each unit.
Fuel Quality - Coal HHV	ASTM Sampling and Laboratory Analysis - As fired
Fuel Quality - Coal ASH	ASTM Sampling and Laboratory Analysis - As fired
Fuel Quality - Coal Sulfur	ASTM Sampling and Laboratory Analysis - As fired
Fuel Quality - Coal Trace Elements	ASTM Sampling and Laboratory Analysis - As fired
Fuel Quality - Oil HHV	ASTM Sampling and Laboratory Analysis - As fired
Fuel Quality - Oil Density	ASTM Sampling and Laboratory Analysis - As fired
Fuel Quality - Oil Sulfur	ASTM Sampling and Laboratory Analysis - As fired
Startup, Shutdown, & Multi-Function Emissions	Obtained from excess emission reports made to UDAQ, utilizing AP-42 factors for uncontrolled sources.
Operating Hours	Boiler operating data obtained from 40 CFR Part 75 CEMS EDR
Inlet Sulfur Rate	Actual CEM measurement taken at scrubber inlet pursuant to 40 CFR Part 60 and Part 75 requirements.
Outlet Sulfur Emissions	Actual CEM measurement taken at stack pursuant to both 40 CFR Part 60 and Part 75 requirements.
NOx Rate	Actual CEM measurement taken at stack pursuant to both 40 CFR Part 60 and Part 75 requirements.
PM Emission Rate	From annual 40 CFR Part 60 App. A Method 5B stack testing

Production / Emission Calculations	Basis
SSAM PM and PM10 Excess Emissions	Utilizing AP-42 & SSAM emissions (in pounds) converted to tons
Heat Input	Multiples fuel quality HHV by throughput, and conversion factors
Inlet Sulfur / Sulfurage	Multiples inlet sulfur rate by heat input, and conversion factors
NOx emissions in tons	Multiples NOx emission rate by heat input, and conversion factors
PM emissions in tons	Multiples PM emission rate by heat input, and conversion factors
PM10 emissions in tons	Multiples PM10 emission rate by heat input, and conversion factors
Be emission factor	Calculated with AP-42 (coal) or EPR's Trace Substance Report (oil), using trace concentration and ash content.
Be emissions	Utilizes Be emission factors and heat input, and conversion factors
Pb emission factor	Calculated with AP-42 (coal) or EPR's Trace Substance Report (oil), using trace concentration and ash content.
Pb emissions	Utilizes Pb emission factors and heat input, and conversion factors
Hg emissions	Utilizes control efficiencies determined by stack testing
Fluoride, HF emissions	Calculated utilizing EPR's Trace Substance Report and trace concentration, and conversion factors
H2SO4 emissions	Utilizes control efficiencies determined by stack testing, and conversion rates listed upon So ₂ Co.'s paper
TRS/BSO sulfur compound emissions	Uses a factor derived on the basis of AP-42 Table 1.1-3, Footnote (b).
VOC's	Using a summation of individual VOC specific emission factors from both AP-42 and EPR's Trace Substance Report to resolve a single cumulative EF, multiplying either throughput or heat input, and conversion factors.

WEPCO Analysis	Description
Actual emissions	Summation of 12 rolling months of emissions calculated on the PRODUCTION DATA worksheet.
Heat Input	Summation of 12 rolling months of heat input calculated on the PRODUCTION DATA worksheet.
Operating Hours	Summation of 12 rolling months of hours calculated on the PRODUCTION DATA worksheet.
Inlet SO ₂ tonnage	Summation of 12 rolling SO ₂ tons to the scrubber inlet calculated on the PRODUCTION DATA worksheet.
Effective 12 month SO ₂ inlet rate	Derived from dividing 12 month inlet tonnage by 12 month heat rate.
Representative rate	Representative rate predicted to have occurred during baseline if this period's heat was utilized. Based upon historical operating and emissions data.
Reconstructed baseline	Representative predicted emissions that would have occurred during baseline period at the representative rate, using the baseline period heat input.
Excess emissions	Difference between the actual baseline and the reconstructed baseline, indicating run-and emission increases that could be accommodated during baseline period.
Non-OFA Predicted Rate	Expected emission rate without the benefit of OFA, based upon historical operating and emissions data.
Non-OFA Predicted emissions	Expected emissions without the benefit of OFA, multiplying predicted rate by actual heat input.
Discounted actual emissions	This is the calculated benefit from OFA which must be discounted to show WEPCO compliance for the Derive Pack Project.
Baseline (adjusted)	Emissions to which the WEPCO test applies, which discounts any OFA benefit, and excludes increases not attributable to the modification.
Discounted Difference	The basis to which the WEPCO test compares, utilizing the baseline emission rate, adjusted to hours of operation.
PSD?	An "if" statement argument that compares the difference against the PSD significance level.